REMARKS

Applicant respectfully requests reconsideration. Claims 1-8, 17-35, 37 and 38 were previously pending in this application. Claims 1, 17, 31 and 38 have been amended. No claims have been added and none have been canceled. As a result, claims 1-8, 17-35, 37 and 38 are pending for examination with claims 1, 17, 31, 35 and 38 being independent claims. No new matter has been added.

Claim Rejections under 35 USC §101

The Office Action continues to reject claim 38 as non-statutory. Reconsideration is requested as the Examiner's legal analysis is flawed. It is unsupported by case law and the statute, and inconsistent with the treatment accorded the claims in *In re Nuitjen*. Indeed, it is inconsistent with the Office's own guidelines, as a result of which the rejection amounts to arbitrary and capricious agency action.

The Office Action states that the claim is "directed to a computer program per se," which it equates to "abstract instructions." Office Action at 2. This is wrong on three counts: First, the claim is not directed to a computer program per se. One need only read the claim to see that. Rejected claim 38 reads:

> 38. A method comprising transmitting a signal which delivers therein program instructions usable to cause a computer to perform a method of claim 1 when executed by the computer.

Above, claim 38 is amended to emphasize that the signal is an electromagnetic signal:

38. (Amended) A method comprising transmitting [[a]] an
     electromagnetic signal which delivers therein program
     instructions usable to cause a computer to perform a method of
     claim 1 when executed by the computer.

That is, the method requires generating an electronic signal and transmitting it. It does not cover a computer program per se. Instead, it covers a physical act of transmitting a signal, which is quite a different thing.

Second, because the claim is not directed to a computer program per se, it does not seek to protect something abstract, instructions or otherwise.

Third, those instructions are required to be usable to cause a computer to perform a method of claim 1, which requires, *inter alia*, "scaling an output value of [a] ... circuit to a desired output value at a first temperature; and matching said output value, at a second temperature, to said desired output value," which actions provide a useful, concrete and tangible result.
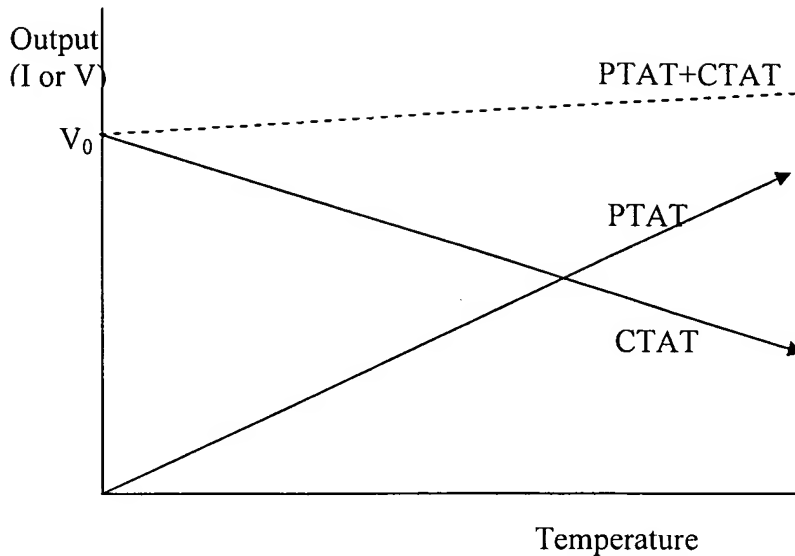
The Office Action cites to MPEP 2106.01 for a quotation that "When *nonfunctional descriptive* material is recorded on some computer-readable medium, in a computer or on an electromagnetic signal, it is not statutory. . . ." (Emphasis added.) However, the transmitted signal delivers program instructions which are quite explicitly *functional* rather than non-functional, having the functional role defined in claim 1, which is not rejected for lack of proper subject matte under Section 101. Thus, the quotation and the Office's analysis of claim 38 are quite off-target and do not support a rejection of the claimed invention for lack of statutory subject matter.

Accordingly, the rejection of claim 38 should be withdrawn.

Claim Rejections under 35 USC §102

Claims 1-8, 17-35 and 37 were rejected under 35 USC §102(b) as purportedly anticipated by Nolan et al '161. Reconsideration is requested as the Examiner appears to have misconstrued either Nolan or the claim limitations. Indeed, the subject matter of claim 1 differs from Nolan in a number of respects.

For example, Nolan does not disclose "altering the temperature of the circuit from the first temperature to a second temperature and correcting said output value at the second temperature to match said desired output value," the correction at the second temperature not changing the output value at the first temperature. While the Office Action cites to portions of Nolan which purportedly disclose such a feature, it will be seen upon closer inspection that, in fact, such limitation is not disclosed. The cited portions (column 3, lines 11-20 and 50-58; column 4, lines 63-67 and column 5, lines 1-5) only discuss two conventional methods of trimming the output voltage value to provide temperature compensation: the independent current method and the variable ratio method, which are based on adjustments of PTAT and CTAT currents as shown in the following diagram:

One signal, CTAT provides a raw value which has no temperature compensation. This is typically derived from a P-N semiconductor junction. It has a particular value, V0, when the temperature is zero in absolute degrees Kelvin. This value is set by the physics of the process, and therefore cannot be adjusted by circuit techniques. This raw value typically has a negative slope as temperature is raised (i.e., it is CTAT), and compensation for this negative slope typically is obtained by adding to it another signal of positive slope (i.e., a PTAT signal), to yield a result which has a much flatter slope variation with temperature, as shown above. This PTAT signal is generally derived from a pair of P-N junctions with appropriate bias and/or size conditions to create the PTAT effect. However, the value at 0°K is zero, as demanded by the mathematics of the relevant equations, and so cannot be adjusted by circuit techniques.

The resultant sum of PTAT and CTAT signals is typically calibrated to achieve a desired output which is constant over temperature. However, since only the slopes of the two curves can be adjusted (and not their offsets), in the classic schemes it is not possible to achieve both a desired output value AND a flat temperature characteristic. Either or both of the CTAT and

PTAT slopes can be adjusted at one temperature to get, for example, a desired output value, but to make this value flat over temperature requires a second change to either or both PTAT or CTAT signals. However, in making this second adjustment, the value originally set is also disturbed.

This is a fundamental problem of the known state of the art in CTAT/PTAT temperature compensation, including the schemes described in Nolan et al. The present invention overcomes this problem and hence is novel.

More expansively, the independent current method involves setting the CTAT current to a pre-determined value at a nominal temperature and the PTAT current to zero, or visa versa. By contrast with the method specified in claim 1, only a single, nominal operating temperature is measured, and operations are not performed at the claimed first and second temperatures. Thus, there is no scaling of an output value of the circuit to a desired output value at a first temperature and altering the temperature of the circuit to a second temperature and correcting the output value at the second temperature to match the desired output value. Thus, to the extent Nolan discloses the independent current method, he does not discuss the operations at the two temperatures, as claimed.

The variable ratio method involves computing the temperature coefficients for the PTAT and CTAT current generators by taking current measurements at two distinct temperatures for each device. This method is quite similar to the prior art techniques discussed in the background section of the present application. In any event, Nolan does not disclose or suggest the claimed invention because there is no disclosure in Nolan that during this variable ratio calibration technique, when the temperature of the circuit is altered from a first to a second temperature, and the output value of the reference voltage is corrected to match the desired reference voltage (by modifying the PTAT and/or CTAT currents), that correction to provide the desired reference voltage at the second temperature does not change the output value at the first temperature. Consequently, disclosure of the variable ratio method does not anticipate the subject matter of claim 1, either.

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As a clarification, and without intending to change the scope of the claims, claims 1, 17 and 31 have been amended to change the term "whereby" to "such that" to make it clear that avoiding a change in the output value at the first temperature when the correction is made at the second temperature is intended as a limitation, not merely a result.

Claims 2-8 all depend directly or indirectly from claim 1 and are accordingly allowable for the same reasons.

Claim 17 is an apparatus claim including means for performing the above-described operations of claim 1 and thus distinguishes over Nolan for the same reasons. Claims 18-30 all depend directly or indirectly from claim 1 and are similarly allowable. Claim 31 is another independent apparatus claim. It specifies a circuit having a digital control means for digitally scaling an output voltage at a first temperature and for digitally matching the output voltage, as second temperature, to a desired output voltage value, such that the desired output value at the first temperature remains unchanged. Consequently, from the discussion above relative to claim 1, it will be clear that claim 31 also distinguishes over Nolan. Claims 32-34 depend directly or indirectly from claim 31 and similarly distinguish over the reference. Claim 35 is a computer program product claim specifying, *inter alia*, instructions for causing a computer to perform the method of claim 1, so it is likewise distinguished over Nolan. Further, claim 37 depends from claim 35 and is similarly allowable.

Accordingly, the rejection of claims 1-8, 17-35 and 37 as anticipated by Nolan et al should be withdrawn.

Claim Rejections under 35 U.S.C. §103

Claims 20-22, 25, 27-29 and 32-34 have been rejected under 35 U.S.C. §103(a) as purportedly being unpatentable over Nolan et al, as applied above, in view of Dauphinee et al.

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However, all of these claims depend directly or indirectly from the above-discussed independent claims which are not anticipated by Nolan et al. Notably, Dauphinee is not cited for a disclosure of the limitations not found in Nolan pursuant to the above discussion. From an inspection of Dauphinee, it also appears to lack those features. Consequently, no combination of Nolan and Dauphinee can negate the patentability of the independent claims from which these rejected claims depend. It therefore serves no further purpose to delve more deeply into the specific limitations of these dependent claims. Though the dependent claims are not further discussed, for the avoidance of doubt Applicants expressly state that they do not concede that the references show any of the limitations of the dependent claims for which the Examiner has cited them, and thus reserve the right to later argue, if necessary, the specific patentability of each and any of the dependent claims.
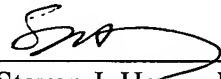
Accordingly, the rejection of claims 20-22, 25, 27-29 and 32-34 should be withdrawn.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

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